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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,323	10/03/2006	Lothar Zipfel	05129-00123-US	5501
23416 7590 06/19/2009 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER NEGRELLI, KARA B				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/580,323

## Applicant(s)

ZIPFEL ET AL.

## Examiner

KARA NEGRELLI

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-100)  
Paper No(s)/Mail Date 05/24/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**REPLACEMENT OF HYDROCHLOROFLUOROCARBONS FOR POLYMER FOAM**

**MANUFACTURE**

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101

as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 16 provides for the composition comprising at least one hydrofluorocarbon blowing agent and a non-halogenated polar organic compound having an atmospheric boiling point of from 30°C to 150°C, but, since the claim does not set forth any steps involved in the method/process of *using* the composition, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

5. Claim 16 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under

35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 16 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Lund et al. (WO 98/02484).
8. Lund et al. teach a method for producing a foam comprising ethylene diamine (a non-halogenated polar organic compound with a boiling point between 30°C and 150°) and a blowing agent including mixtures of 1,1-dichloro-1-fluoroethane (HCFC-141b) and 1,1,1,3,3-pentafluoropropane (HCFC-245fa). See page 2, line 30-31; page 3, lines 8-10; page 6, lines 8-11
9. Lund et al. does not expressly teach that the 1,1,1,3,3 pentafluoropropane is "for improving the stability of a thermoplastic foam manufacturing process," as taught in instant claim 30. However, Case law holds that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the

claim. See MPEP 2111.02, *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

10. Claims 16-20, 25-26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Park et al. (US 5,369,136)

11. Park et al. (US 5,369,136) teaches polymer foams which incorporate a blowing agent, including ethanol, 1,1-difluoroethane, 1,1,1,2-tetrafluoro-ethane, 1-chloro-1,1-difluoroethane (column 15, lines 26, 31-32, and 40-41), wherein said foams can comprise polystyrene (column 4, lines 57-58) and which can be produced using an extrusion process (column 13, lines 39-50). Park et al. further teach a polymer foam which incorporates a 1-chloro-1,1-difluoroethane (HCFC-142b) and ethanol mixture as a blowing agent (column 19, example 3).

12. As to instant claim 28, Park et al. do not expressly teach that the production rate of the foam is 85 to 110% relative to the production rate of the foam manufacturing equipment when operated with the HCFC-blowing agent. However, since the same method of instant claim 16 is taught in Park et al., one of ordinary skill in the art would expect that the method would have the same properties, such as that taught in instant claim 28, i.e. the same production rate of foam. Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duffy et al. (WO 02/051919).

15. Duffy et al. teach a blowing agent composition comprising at least one Mid-range low-boiling hydrofluorocarbon (MRLB HFC), at least one Low-range low-boiling hydrofluorocarbon (LRLB HFC), and at least one component selected from low-boiling alcohol (LBA) and low-boiling carbonyl compound (LBC) (page 4, lines 32-34). The blowing agent composition is used to produce a polymeric foam (page 4, lines 12-20). The preferred LBA is ethanol (page 5, lines 1-7). The combined concentration of LBC and LBA is greater than zero and less than 60 wt. %, and most preferably from 10 wt% to 20 wt. % (page 5, lines 11-22). The blowing agent composition may be free of LBA is LBC is present, and may be free of LBC if LBA is present, or may contain both (page 5, lines 11-13). Suitable LRLB HFCs for use in the invention include 1,1-difluoroethane

(page 6, line 36), 1,1,1,2-tetrafluoroethane, 1,1,1,3,3-pentafluoropropane (page 7, lines 1-7).

16. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. The amount of LBA (ethanol) used in the invention of Duffy et al. overlaps the range of non-halogenated polar organic compound taught in instant claims 21, 22, and 29. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir. 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

17. Duffy et al. further teach that the blowing agent is used in an extrusion process to produce a polystyrene foam. The process can comprises mixing a thermoplastic material (polystyrene) and a blowing agent composition to form a foamable polymer and then extruding the mixture (page 9, line 35 - page 10, line 26). The components of the blowing agent composition can be added individually or in any combination (pertaining to instant claim 27).

18. Duffy et al. do not expressly teach that the production rate of the foam is 85 to 110% relative to the production rate of the foam manufacturing equipment when operated with the HCFC-blowing agent. However, since the same method of instant claim 16 is taught in Duffy et al., one of ordinary skill in the art would expect that the method would have the same properties, such as that taught in instant claim 28, i.e. the

same production rate of foam. Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

19. As to instant claims 23 and 24, Duffy et al. do not expressly teach that the foam manufacturing equipment is "designed for use with a mixture of chlorodifluoromethane (HCFC-22) and 1,1-difluoro-1-chloroethane (HCFC-142b)." However, Duffy teaches adding the hydrofluorocarbon and ethanol blowing agents into polystyrene and extruding the mixture. One of ordinary skill in the art would have found it obvious that an extruder that can be used to process the hydrofluorocarbons of Duffy et al. could also be used to process the instantly claimed hydrochlorofluorocarbons.

20. Claims 16-23 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albouy et al. (US 6,624,208).

21. Albouy et al. teach a composition for use as a polymer blowing agent comprising 1,1,1,2-tetrafluoroethane and which can include from 1% to 26% of an alcohol such as ethanol (column 3, lines 4-8 and 17-20). It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. The amount of (ethanol) used in the invention of Albouy et al. overlaps the range of non-halogenated polar organic compound taught in instant claims 21, 22, and 29. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In*

*re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

22. Albouy et al. further teach using the blowing agent to produce an expanded polymer, such as styrene, by using an extrusion process. The extrusion device used is suitable for use with HCFC-142b. See column 3, lines 22-35, lines 48-50, and line 64-66). Albouy et al teach that the constituents of the blowing agent composition can be either mixed together and injected into the extrusion chamber as a mixture or added by separate injection of each constituent into the extrusion chamber (column 3, lines 12-17, pertaining to instant claims 26-27).

23. Albouy et al. do not expressly teach that the production rate of the foam is 85 to 110% relative to the production rate of the foam manufacturing equipment when operated with the HCFC-blowing agent. However, since the same method of instant claim 16 is taught in Albouy et al., one of ordinary skill in the art would expect that the method would have the same properties, such as that taught in instant claim 28, i.e. the same production rate of foam. Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is

(571)270-7338. The examiner can normally be reached on Monday through Friday 8:00 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KARA NEGRELLI/  
Examiner, Art Unit 1796

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796